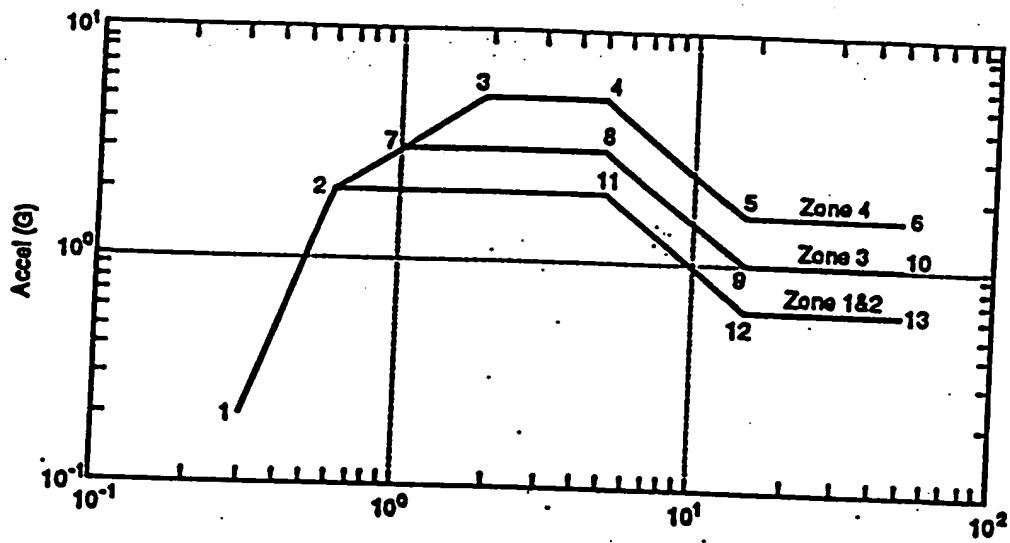


Earthquake Synthesized Waveform - VERTEQII

Fig 1A



Coordinate Point	Frequency (Hz)	Values for Upper Floor Acceleration (g)	Coordinate Point	Frequency (Hz)	Values for Upper Floor Acceleration (g)
Zones 1 and 2					
1	0.3	0.2	1	0.3	0.2
2	0.6	2.0	2	0.6	2.0
11	5.0	2.0	3	2.0	5.0
12	15.0	0.6	4	5.0	5.0
13	50.0	0.6	5	15.0	1.6
Zone 3					
1	0.3	0.2	6	50.0	1.6
2	0.6	2.0			
7	1.0	3.0			
8	5.0	3.0			
9	15.0	1.0			
10	50.0	1.0			

Fig 1B

200

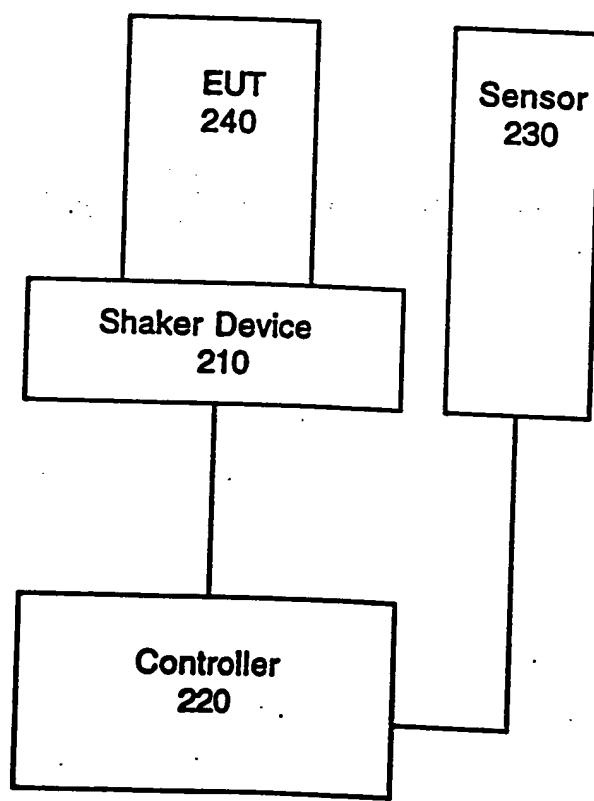


FIG 2

300

310

Load preliminary shaker instructions in a test controller.

320

Produce dummy load initial caligreated shaker instructions.

330

Provide dummy load final calibrated shaker instructions.

340

Produce equipment under test (EUT) initial calibrated shaker instructions.

350

Perform a full force waveform test on the EUT utilizing said equipment under test (EUT) initial calibrated instructions.

FIG. 3A

321

322 ↘

Shake a dummy load at a first attenuated value of the preliminary shaker instructions.

323 ↘

Measure the actual acceleration time history movement of the dummy load when shook at the attenuated value of the preliminary shaker instructions.

324 ↘

Analyze if a dummy load attenuated test response spectrum (TRS) is projected to be within acceptable range of a required response spectrum(RRS) requirements.

325 ↘

Make adjustments in the preliminary shaker instructions to produce the dummy load initial calibrated shaker instructions, the adjustments calculated to bring a dummy load full strength test response spectrum within acceptable range of the required response spectrum (RRS)

FIG 3B

331

332 ↘

Shake a dummy load at full strength value of the dummy load initial calibrated shaker instructions.

333 ↘

Measure the actual acceleration time history movement of the dummy load when shook at the full strength value of the dummy load initial calibrated shaker instructions.

334 ↘

Determine if the dummy load full strength test response spectrum (TRS) is within an acceptable range of the required response spectrum (RRS).

335 ↘

Make adujustments in the dummy load initial calibrated shaker instructions to produce the dummy load final calibrated shaker instructions, the adjustments calculated to brning a test respons spectrum (TRS) within an acceptable range of the required response spectrum (RRS).

FIG 3C

341

342 ↘

Shake equipment under test at a second attenuated value of the dummy load final calibrated shaker instructions.

343 ↘

Measure the actual acceleration time history movement of the equipment under test when shook at the attenuated value of the predetermined waveform.

344 ↘

Determine if the equipment under test attenuated test response spectrum (TRS) is within an acceptable range of the required response spectrum (RRS).

345 ↘

Make adjustments to the dummy load final calibrated shaker instructions to produce the equipment under test attenuated shaker instructions if the dummy load full strength test response spectrum (TRS) is not within an acceptable range of the required response spectrum (RRS).

FIG 3D

351

352 ↘

Shake equipment under test at a full strength value of the equipment under test final calibrated shaker instructions.

353 ↘

Measure the actual acceleration time history movement of the equipment under test when shook at the full strength value of the predetermined waveform.

354 ↘

Determine if the test response spectrum (TRS) is within acceptable range of the required response spectrum (RRS).

FIG 3E

400

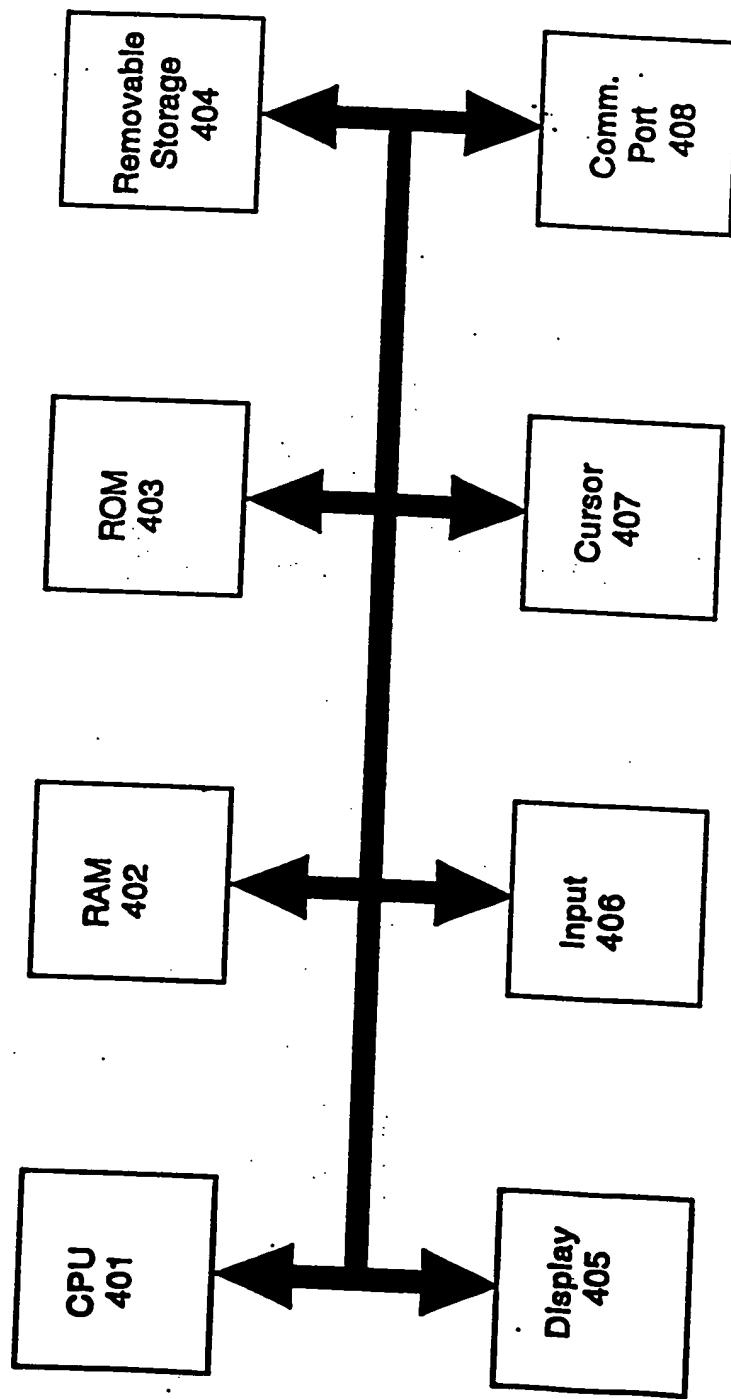


FIG 4

500

510

Perform an EUT preparation process to ensure the EUT is ready for testing.

520

Perform a transient vibration time history testing calibration method.

530

Apply full level vibration simulation calibrated forces to the EUT.

540

Perform a post test inspection of the EUT.

FIG 5

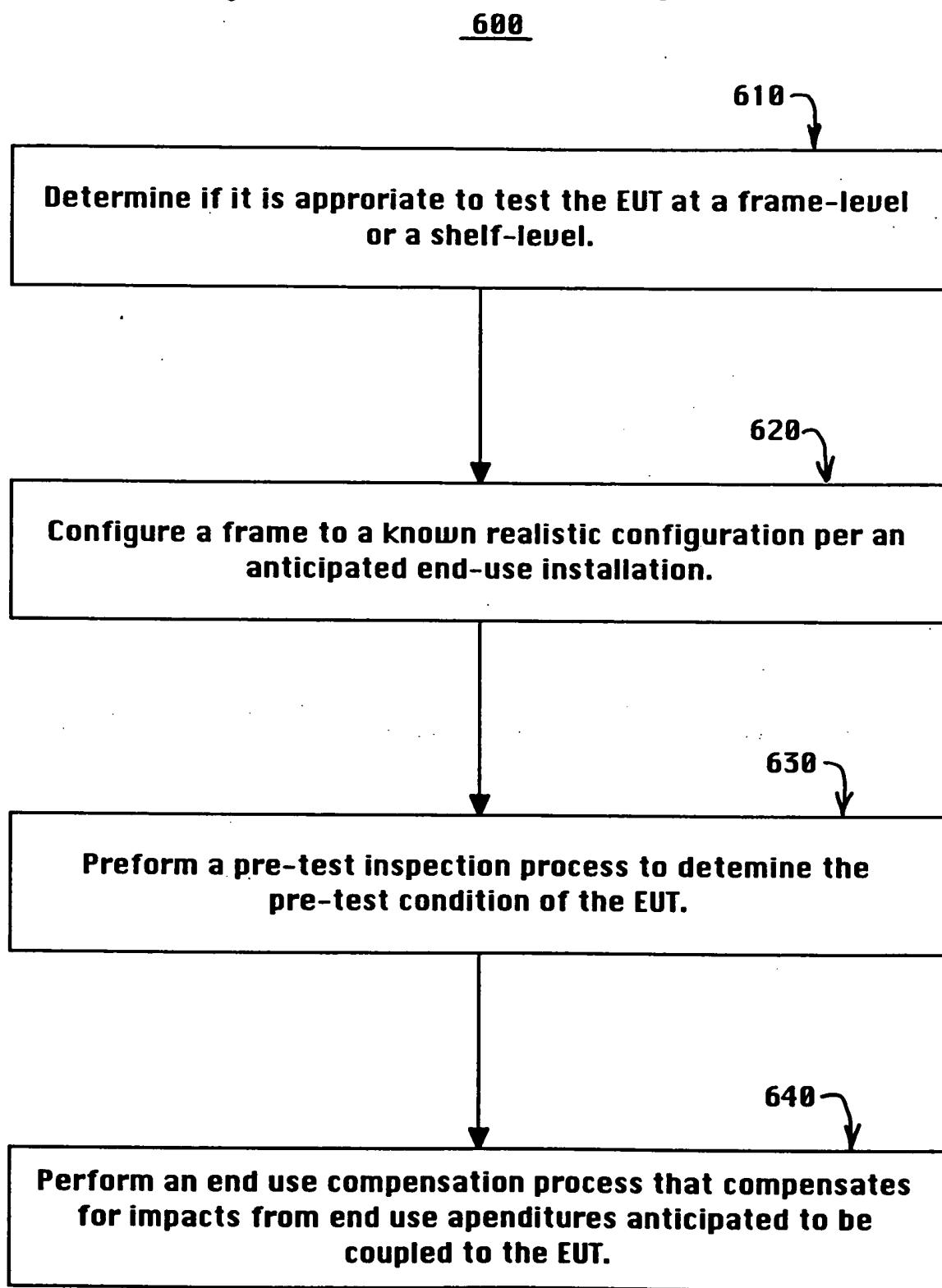


FIG 6

Test Parameter	Performance Criteria	Test Tolerance
VERTEQII waveform	TRS shall meet or exceed RRS	TRS less than 30% over RRS from 1 to 7 Hz
Acceleration	synthesized waveform 1.6 G's peak for 30 seconds	Not Applicable
data sample rate	200 Hz	Not Applicable
test frame system weight	435 lbs (approximately)	+/- 5%
load-cell torque	up to 65 ft-lbs	+/- 1 ft-lb
Displacement (rack top)	76.2 mm maximum	+/- 5 mm

FIG 7

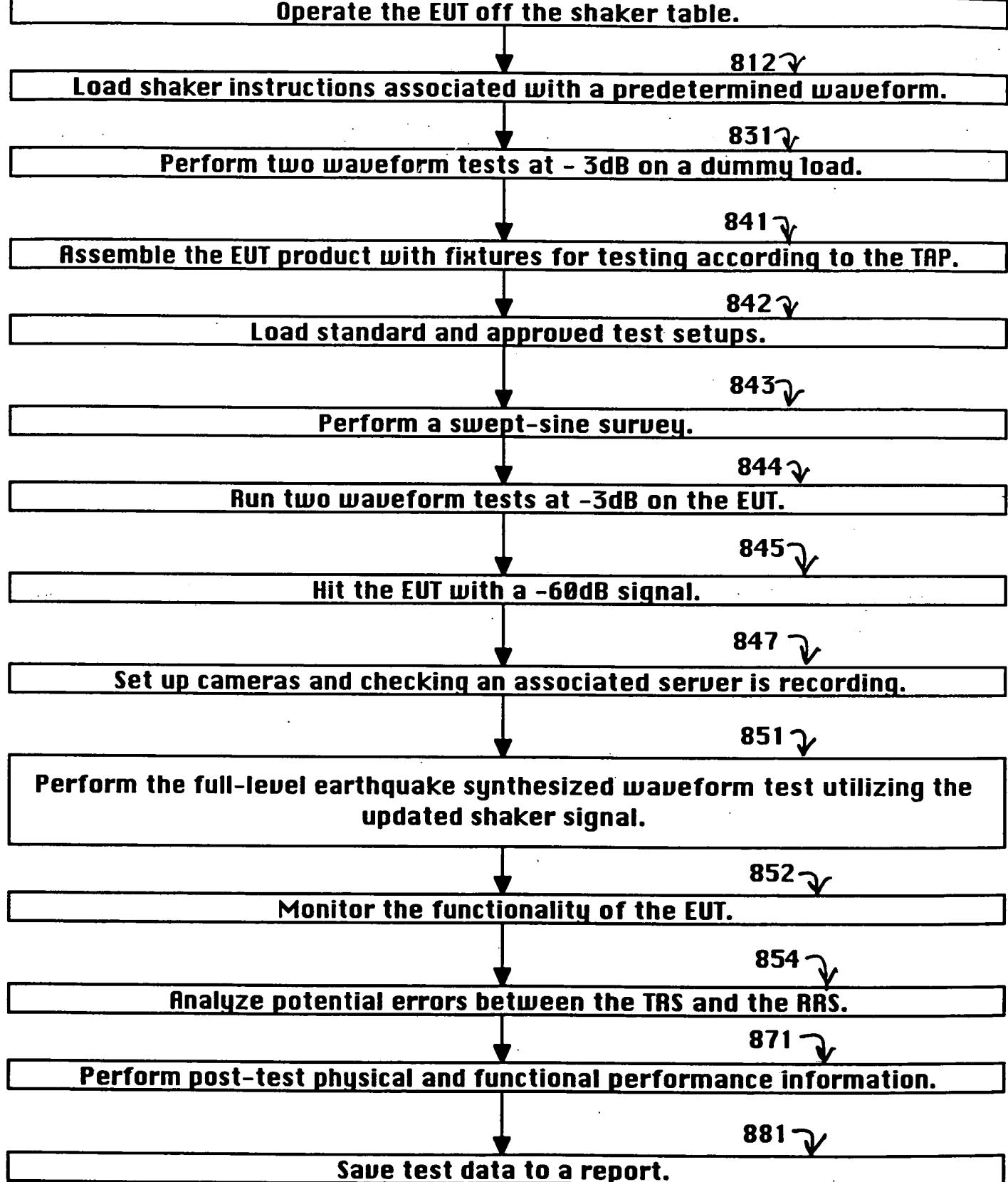


FIG 8

Test Parameter	Performance Criteria	Test Tolerance
Frequency Range	1 to 50 Hz	Not Applicable
Sweep Rate	-1.0 octave/minute	Not Applicable
Acceleration	0.2 G's	+/- 0.02 G's
data sample rate	200 Hz	Not Applicable
test frame system weight	435 lbs (approximately)	+/- 5%

FIG 9

Model #	Code Name	Business Unit	BU Contact
Date	Vertical	Front-to-Back	Side-to-Side
Time			
Test Engineer or Technician			
Frame Top Resonant Frequency (Hz)			
EUT Resonant Frequency (Hz)			
Peak Acceleration Response at the top of the Frame (G)			
Displacement (inches or mm)			
Doors, Covers, Panels			
Cracks, Buckles, Visual inspection			
Bolt or Anchor Torque values (ft-lb)(4)			
Load Cell values (lb, all 4)			
LED Status during the Test			
Diagnostic or software function during the Test			
Comments			

FIG 10